DOCUMENT RESUME

ED 439 481 EA 030 277

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TITLE Improving Student Achievement in Today's High Schools: What Works.
PUB DATE 1999-10-00
NOTE 49p.; Paper presented at the Phi Delta Kappa International Conference on Effective Schools (Houston, TX, October 1999).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academic Achievement; Change Strategies; Curriculum Design; Educational Change; High Schools; *Instructional Effectiveness; *Professional Autonomy; Teacher Administrator Relationship
IDENTIFIERS Maine

ABSTRACT

This paper is based on a study of two high schools in Maine that achieved outstanding and consistent gains in English, math, and science over a 5-year period. Three strands of inquiry were used for the study: surveys, interviews, and observations. A multiple-perspective approach was used to integrate the information so as to evaluate the perspectives of the teachers, the administrators, and the students in comparison to what was actually taking place in the classrooms. Two questions guided the research: What strategies were used to improve student achievement? and What was the culture of those schools? The key finding to emerge was that change was not mandated at either school. No single program of reform or restructuring was followed, and no task force pushed teachers into a single model of change. Rather, teachers were allowed to come to their best judgment about what they should do. Some changes were departmental; many were individual. Teachers felt supported in trying out new ideas but were independent in setting their own pace for change. They felt free to analyze their weaknesses without the fear of criticism or punishment. This context of trust and benevolence was seen as necessary to the gains in student achievement. (Contains approximately 85 references.) (RJM)

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IMPROVING STUDENT ACHIEVEMENT IN TODAY'S HIGH SCHOOLS: WHAT WORKS

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for

Phi Delta Kappa International Conference on Effective Schools
Housto, Texas
October 1999

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INTRODUCTION:

Since the publication of "A Nation at Risk" in 1983, our public schools have be deluged by literally hundreds of recommendations and programs for improving student achievement. Indeed, in some schools the ink has barely dried on one new program before another is initiated. The impetus for my research came out of the need for clarity and understanding of those myriad recommendations, and their effectiveness in actually improving student achievement.

Shepard & Kreitzer (1987) chronicle some of the large amounts of money invested in reform measures on the basis of what they call "beliefs and hunches". Fullan (1991) also cites confusion and discusses the need to identify the most powerful levers for reform at our disposal. While research has provided us with information on what schools look like that have high student achievement, it has not provided educators with those important levers that help schools get there.

As I studied the research, I found very little that connected program changes to increased student achievement, particularly for high schools. Much of the research involved large elementary schools with high minority populations. High school studies were few, most were based on reading scores alone, and many were based on schools that were considered "excellent" by rather subjective standards. Yet by the late 80s and early 90s, many high schools, indeed many whole districts, were flinging themselves into major programs for change.

Several years ago, I had the opportunity to work with some high schools in Massachusetts that were in the throes of reform or restructuring. And I use the word 'throes' literally here: these schools were struggling both internally and externally, and they were suffering the pain of developing new systems of teaching, learning, and administration.

What I found most interesting was that the schools were following totally different plans and models. For example, one high school, located in a wealthy suburban district, was in the beginning of a six year system-wide reorganization and was providing major professional development for teachers. Another high school, an urban school that was in a budget and academic crisis, announced the total reorganization of the high school into "schools within a school", to be accomplished in a year by teachers. There, almost no professional development was being provided.

The schools could not have been any more different in size, funding, or geography. However, the reactions I heard from teachers at both schools were very similar. There was a great deal of dissension about the direction of change, the value of change, and the need for change. Even many of the teachers at the suburban school who had been included in designing the change process felt that the changes were a foregone conclusion and that their discussion meetings actually had fixed agenda and outcomes. They were simply bowing to the inevitable from above. Few of the teachers at either school believed that reform or restructuring would accomplish its purpose: that it would raise student achievement.

My conversations with those teachers and administrators led me to examine the reform and restructuring movements that had been operating in Maine high schools for a period of years. Naturally, I expected that schools that had invested time and money into large efforts of reform or restructuring would show some kind of results in student achievement levels, and I wanted to closely examine the powerful levers each school used.

I began my study by first examining achievement scores on Maine Educational Assessment Tests (MEAs) over five years for schools that had been labeled 'Schools of Excellence' by the Federal government. Of the secondary schools examined, not one had

consistently improved student test scores from 1987-1991. In fact, there were several declines, and the highest increase in a single subject was 60 points.

Next, I examined scores for high schools that had received state funding and/or grants to develop programs for school improvement in Maine. Again, no increase in student achievement. I then examined schools that had been part of Sizer's Coalition of Essential Schools for more than five years. It was very disappointing not to find any schools with consistent gains across content from that sample either.

Finally I reversed my search and examined total high school achievement scores for English, math, and science over 5 years, looking for any schools that showed consistent and significant improvement. Only two out of 129 high schools in Maine met my criteria for student achievement gains that were both outstanding and consistent. Those are the schools my study examined. I found that although the schools were quite different in their structure and methodology, their climate and their strategies for improving student test scores were remarkably familiar.

RESEARCH METHOD

In order to examine both schools, I chose three strands of inquiry: surveys, interviews, and observations. The survey was the Classroom Environment Scale developed by Moos (1987). It is a simple instrument that gives the insider's view of the personality of a setting. Sometimes people in the same organization may perceive its climate in very different ways. The survey focused on teacher/student relationships and provided nine scores in three general areas: relationship dimensions; personal growth dimensions; and system maintenance dimensions. The survey results provided one half of the 'map' that would guide my observations.

My interview questions for administrators and department heads came from the framework of questions used in the studies of Rutter (1979), Brookover and Lezotte (1977), Sizer (1984), and Goodlad (1984). The answers to these interview questions provided the other half of the 'map' for my observations.

The results of the interviews and surveys informed and directed my observations. In this study, a multiple perspective approach was used to integrate the three strands of information to evaluate the perspectives of the teachers, the administrators, and the students in comparison to what was actually taking place in the classrooms.

There were two central questions that guided the research in this study:

1. What strategies were used in the two schools studied in which student achievement has significantly improved?
2. What was the culture or 'ethos' of those schools?

When I began this study, I believed that the culture of the two schools studied would be the product of the strategies for improvement. This belief was based on some of the literature involving standardized testing, school reform, and school culture. For example, a study by Madaus (1992) indicated that in schools that 'teach to the test', classroom instruction is dominated by recitation and rote drill. Darling-Hammond (1993) claims that a Theory X culture, rigid, hierarchical, and impersonal, is the product of 'effective' schools. The assumption is that the employment of strategies that aim to raise student achievement in testing produces a rigid school culture that emphasizes lower level comprehension skills at the expense of higher level thinking.

However, by the end of my research, I came to believe that the school culture was not a 'product' of school change at the schools studied, but a significant part of the 'process' of that

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change. It did not 'cause' the changes; rather, it created the pre-conditions under which change occurred and it directed the course of those change strategies. It became apparent to me that I could not compare change strategies at the two schools studied without first examining school climate at those schools.

Ornstein (1991, p. 49) states it most clearly for me: "...success of reform depends in large measure on the features of the local school: the school culture, school organization, and school ethos. ...school as a whole and schooling as a process are interlinked."

COMPARISONS OF THE TWO HIGH SCHOOLS

For purposes of confidentiality, the high schools will be called Grandview High and Pineland High. The principal of Grandview will be Mr. Smith and the principal of Pineland will be Mr. Jones.

School Climate

The setting and the architecture of Grandview and Pineland differed, and I believe those differences reflected the differing personalities of the two schools, as will become apparent in the course of this comparison. Grandview sprawls across the top of a hill and is visible in all of its angles to a visitor approaching from its sweeping drive. Its siting challenges the wind and weather. Inside, it is open, light, and airy. Pineland, on the other hand, is tucked into a pocket of forest, square and strong, protected from the elements by the trees that nearly surround it. Inside, it is warm and cosy, a world unto itself.

However, once inside the schools, some similarities become evident. Both schools are sparkling clean and shiny, though neither school is new; both are more than 25 years old. Halls

and classrooms look freshly painted, and classroom desks and student lockers are clean and free of graffiti. Undefiled student work and educational posters cover the walls in both schools. The buildings themselves seem to say, 'Welcome. People who care live here.'

After wandering the halls and classrooms on my first visit to each school, I returned to the main offices and was made aware of another difference between the schools that reflected their differing characters. At Grandview, the main office was the nerve center of the school. All of the secretaries worked out front and a number of small offices opened directly off the main office. They included the offices of the principal and assistant principal, the athletic director, the copy room, and several other workspaces. At my first visit and all subsequent visits at Grandview, the principal was out front and part of the action.

At Pineland, the principal's office was a suite of two small rooms that were connected from the rear to the main office, but visitors entered from a separate hall door, and the principal's secretary operated as an organizer and gatekeeper. I only saw the principal in his office. After our first meeting and interview, all my work was carried out through his secretary.

The principals at Grandview and Pineland were equally welcoming. They spoke with pride of their teachers and their students, and expressed an interest in using my study as a possible learning tool for their schools. Both Mr. Smith and Mr. Jones were confident and decisive. After hearing my proposal and ensuring confidentiality for students and teachers and feedback to their faculty, they committed to the study at our first meeting. They were both certain that their teachers would welcome me as well.

Although the reception and results of my initial visit were the same in both schools, I found that the principals' personalities and approaches were quite different. At Pineland, my conversation with Mr. Jones was very professional. He wanted all of the possibilities of the study

explained carefully, including schedules, school involvement, and possible effects on teachers and students. When he was satisfied with my answers, he turned me over to his secretary and I did not see him again except for pre-scheduled meetings.

At Grandview, Mr. Smith was interested in my research on a personal as well as professional level. In addition to discussing the implications of the study for his school, we talked about other educational topics. By the end of our initial meeting, we were on a first-name basis, and he personally handled most of the logistics for my study. I dropped in to chat with Mr. Smith during nearly every visit I made to his school. He was usually out in the front office talking to teachers or students. There was little gate keeping at Grandview.

I was less sanguine than the principals about my reception by the teachers whose classes I would intrude upon, but the principals' confidence was well placed. Department chairs and teachers at both schools took time from their busy schedules to talk to me. Again I noticed differences in our interviews. The department chairs at Pineland were on a tight schedule; they came prepared with notes based on my proposal. They had lists of questions and prepared statements. Most of our interviews were organized, structured, and professional. However skeptical they may be, they all committed to my study and they welcomed me to visit their classes at any time. They were confident in their own competence and that of their teachers. There was no sense of defensiveness in their attitudes or postures. But clearly, visitors to the school are carefully screened, not from any need for personal protection, but rather to avoid intrusion and time wasted.

At Grandview, my interviews with department chairs were more informal and more personal. As it was with the principal, we were immediately on a first-name basis. Our scheduling was less tight and some of our conversations spilled over into after school time. As

the local high school for a college of education, the teachers at Grandview were well used to opening up their classrooms to student teachers and supervisors; visitors are frequent and evaluation and discussion of ideas takes place constantly.

By the end of my interviews, I began to get a sense of the intrinsic differences between the two schools as well as their similarities. Pineland High School is much more structured than is Grandview. Classroom assignments at Grandview reflect the less-structured movement and openness I sense at my interviews. Although there is a central area for each department and some teachers enjoy having their own rooms, other teachers in all three departments that I observe travel to hold their classes on three separate floors. I often find myself observing an English class in a math or social studies room.

My impressions of the type of structure and organization at the two schools are supported by the results of the survey. While at both schools students and teachers give 'rule clarity' and 'teacher control' low ratings, those ratings are much higher for Pineland than they are for Grandview. The 'looseness' of rules that Mr. Smith at Grandview spoke about at our interview is a view shared by teachers and students. Pineland students and teachers perceive their climate as much more structured. Yet, with no advance warning, I am welcomed into classes by the teachers at both schools with the same curiosity and friendliness.

Students at both schools are comfortable talking to me as well and they demonstrate no embarrassment at my observations in their classes. The level of trust between teachers and students is evident in the classes I visit at both schools where even poor readers volunteer to read aloud without fear of ridicule or criticism. Students at both schools give 'teacher support' one of their highest ratings in the survey, although the Pineland ratings are again considerably higher

than those of Grandview. Students at Pineland appear to appreciate the structure and control of their school and see it as supportive.

The teachers I speak to at both schools perceive their administrational organization as hierarchical, with strong management and leadership from their administrators. I was aware of that hierarchy when both principals accepted my proposal for this study without consulting teachers first. That also indicates to me that the principals are given authority as well as responsibility, since they did not consult their superintendents either. Both principals pass on this authority to the teachers when it comes to instruction. The strong hierarchical management appears to be confident enough to delegate authority. Teachers believe their administrators are supportive of new ideas, and while teachers are held accountable, they are also given the authority and responsibility for instructional practices. Leadership appears to be through support rather than directives.

Administrators and teachers are well-educated and highly experienced at both schools. Mr. Smith and Mr. Jones both moved into the principalship from longstanding positions in the same schools. They each know their school and community well. They took over as administrators in the early days of state testing and have provided consistency and continuity ever since. They both emphasize academic goals and, according to interviews and the survey, they are supported in that emphasis by teachers and students. Both schools have had a strong common sense of purpose in their schoolwide emphasis on basic skills throughout the rise in student test scores. While Mr. Smith's strength appears to be in interpersonal skills and Mr. Jones's rests more on management, both principals base their leadership on support rather than overt control. At both schools, teachers average eight years of experience and most have masters degrees.

Community Climate

The communities served by Grandview and Pineland share several similarities in the Community Occupational Index (COI) reported on the Maine Assessment tests. On a scale of -4 to +4, both communities are rated in the negative; there is instability in the employment picture in both communities. Both have relatively low median incomes and, according to the 1990 census, only a small percentage of their populations are employed in executive, administrative, managerial, or professional positions. Another similarity is that the communities served by both schools are predominantly white, 99% according to the Census, and of English, Scottish, or western European extraction. It is not surprising then that the traditional hierarchical school administration reflects the conservative blue collar populations that the schools serve.

The ethos of both communities is carried out in the schools, and that ethos, despite the differences, is similar for Grandview and Pineland. The dictionary defines 'ethos' as the moral, ideal, or universal element underlying a work of art. Here, it applies to the underpinnings of a school climate.

I believe that for Grandview and Pineland High Schools, that ethos could be interpreted to read, 'Hard work can accomplish anything'. Certainly, according to the survey and class schedules, the teachers at both schools are hard working: they have large class loads and little prep time. While students as a whole are less hardworking than their teachers, according to the survey indications of time spent on homework, they know their teachers expect them to be. One student in a group I talk to in study hall tells me, "The teachers make us work too hard. They won't give us a break." His friends agree. Those same students admit to me that they have other priorities. However, one tells me that, "If I wanted to do the work, I could get good grades too!" Even while they repudiate the hard work ethic, they recognize its validity for the

school community. At Grandview and at Pineland, based on interviews, surveys, and observations, the majority of administrators, teachers, and students all agree that, with hard work, ALL students CAN succeed, and that students can be responsible for their own success. Some still choose not to.

There is a high personal as well as academic relationship between students and teachers at Grandview and Pineland. Students at both schools rate their teachers as supportive. Teachers model respect for students and most students trust their teachers.

I have gone into great detail about the similarities of school and community climate at Grandview and Pineland because I feel that an understanding of this climate is important since it provides the background for the changes in attitude, curriculum, and instruction that followed the initial low test scores.

While the climate at both schools did not cause the changes in attitude, instruction, and curriculum, it allowed the changes to take place in a way that was consistent with the characteristics of each school.

Attitudes

In interviews and surveys, principals, department chairs, and teachers at both schools credit the initial rise in test scores to a change in attitude about the tests. This is not to imply that everyone involved bought into the school goals or that no dissension existed at either school. Teachers and principals at both schools tell me that when the MEA's were first administered by state mandate in 1985-86, they felt that the test was an intrusion on their independence in the classroom, and an unfair comparison of their teaching abilities and their students' knowledge with schools in neighboring towns and across the state. Much of the general criticism by

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educators of the state achievement tests involved the improper uses of the test results in comparing schools and demanding change.

Bob Keyes (1986, March 24), in a newspaper article described it thus: "... administrators and school directors have found themselves on the short and long ends of sticks, depending on how their students performed." He talks about irate parents demanding better results, and the educational establishment's opposition to the state's decision to publish the test scores.

On May 19, 1987, an editorial in the Bangor Daily News claimed that as a result of the tests, "Any school board member should be able to tell in any subject just where students are having trouble..." The editorial writer advocated looking at student performance in individual classrooms, and suggested that school board members order change or be deemed "remiss in their jobs". This type of reaction was common, causing fear for job security and mandated changes in many schools.

Public reaction to the publication by the state of 'report cards' for schools, a 10 page booklet that compared school scores and budgets and gave stars to schools that scored high or greatly improved their scores, added to the climate of fear. Warnings from the state's Department of Education about the improper use of the tests as comparisons often fell on deaf ears when communities were determined to punish someone for low scores.

However, after the Grandview and Pineland communities made their dissatisfaction with the test results known, community members followed tradition and left the schools to decide on what course to follow. Neither Mr. Smith nor Mr. Jones threatened teachers or imposed major changes on their schools. Instead, they set out to convince the teachers that the tests could be helpful to their teaching and could

contribute to the pride and self-esteem of the school. However, as in other districts, it was made clear by the administrators at both schools that change had to occur, that scores must be raised.

Teachers accepted their responsibility to be accountable. Once the objective to raise scores was clarified, the principals and teachers at both schools then set out to convince the students of the necessity of raising scores by appealing to their pride and by changing the setting and emphasizing the importance of the tests.

I do not believe that those changes in attitudes could have been brought about without the level of trust that existed in the school community. Teachers at both schools tell me that it was that mutual trust and support that made it possible to openly identify and discuss the need to improve student achievement scores and to convince students of their need to do better. The principals at both schools tell me that their respect for the knowledge and experience of their teachers allowed them to delegate the responsibility for finding individual ways to improve student scores. A singleness of purpose in goals existed at both schools to direct the focus of the improvements along similar lines.

Neither the teachers nor the students have had a complete about face on the value of the tests; nor did they suddenly like giving or taking the tests. Teachers I talk to are still suspicious of the tests. One teacher at Grandview tells me that she 'feels pressured. . . to raise student test scores'. Another says that the concentration on testing is 'taking attention away from more important programs', such as outcomes based assessment. The curriculum director at Pineland clearly would like the focus of the school to change from basic skills to 'personal development', while another teacher thinks there is still 'not enough attention paid to academics', but most tell me that they have accepted the need for accountability in the community and that they appreciated not being forced into unwanted changes by the administration. They also felt their students deserved 'their best shot' at doing well on the tests.

The students tell me that they still hate taking the tests, but that they 'give it their best shot' to please their teachers and prove themselves. Listening to this dissent, it is hard for me to imagine that a mandate on any specific plan to raise student achievement could have been successful at either school. Instead, the climate and 'ethos' of the schools did allow for independent action to work toward that goal. I believe that the stability and experience and trust that existed in both schools held the school communities together and made improvement possible.

Not only did student test scores improve dramatically in both schools within four years, but the rise in scores held and even increased over the following two years. Although teachers at both schools are defensive about 'teaching to the tests', several confide that that is exactly what occurred and that students benefitted. Teachers are proud of how well their students have done.

Change

Administrators and teachers at both schools agreed that administrative and organizational policies did not change between 1987 - 1991. There was no large infusion of new ideas from outside sources and no major changes in administrative personnel. Faculty turnover was very low and there were no major programs in visioning and goalsetting. Neither school received any state 'restructuring' grants, nor had either school followed any specific reform or restructuring programs. Neither school increased its budget nor decreased its teacher/student ratio during that time.

Change strategies at both schools reflected community goals and culture, with an emphasis on basic skills, hard work, and mutual trust among students, teachers, administrators, and community. For example, when the initial MEA scores were low, instead of criticizing

teachers and students, and initiating a top down plan to improve test scores, both principals encouraged teachers to come up with their own plans by providing individual support.

The way in which that support was provided again reflects the different aspects of the two schools. At Grandview, help was brought to the school. Specialists came to help teachers analyze the test scores in individual content areas. Teachers listened to professional suggestions on areas of student weaknesses in the tests and were then allowed to work independently and departmentally on finding ways to strengthen those weaknesses. In some cases departments made curricula changes, while in others, teachers made instructional changes. Some funding was provided to meet individual needs.

At Pineland, teachers were also offered funding to pursue whatever course they thought would be most helpful. Most teachers went outside the school for help, choosing to increase content knowledge and instructional knowledge through additional course work.

In either case, the need for outside help was recognized and acted upon. Without any large expenditure of money or time for staff development, teachers and administrators made some important decisions. At both schools, teachers were the major instruments of change.

Curriculum

Once teachers accepted their responsibility in raising test scores, they directed their focus to the tests themselves and their students' responses. Although still uncomfortable with the tests, the teachers made the decision to use them as a tool to help them improve student scores. The tests were examined by content areas to see where students were lacking.

When teachers began analyzing subject sections of the test instead of looking at overall scores, departmentally some changes were made in the curriculum. One result was an upgrade in

curriculum for all students. For example, because many of the questions on the test required knowledge of algebra, general math courses were dropped and algebra was required of nearly all students. Since some students needed more time, low ability algebra classes offered algebra 1 over a two-year period. Special attention was also paid to students who scored particularly low, such as girls and low ability students. Gains for both have outpaced general gains. While one can argue that those students had the furthest to go, that might be said for all schools, and yet the gains for girls and low level students outpaced state averages for the same groups as well. One offshoot of requiring all students to take algebra has been that at both schools a larger percentage of students is also electing to take more than the basic two math credits required for graduation.

Both schools offered a core curriculum to all students. Both teachers and students believe that all students can learn. Some may take more time; some may learn in different ways; texts and the depth of coverage may vary. But all students are being offered the same chance to learn. At both schools, instead of tracking students by their ability level, classes are now tracked by their level of difficulty and all levels are open to all students. There are generally three levels of difficulty in most of the subjects studied, and these are designated in some way in the Curriculum Guide at both schools, such as in English A, B, and C. Instead of being limited to high, general, and low tracks, students may choose to take the higher level courses in subjects in which they do well, and lower level courses in subjects that give them trouble.

For example, the same student may take English A, Biology B, and Algebra C. The guidance department and the teachers at both schools openly encourage students to take the highest level courses that they can manage. However, while this may look good on paper, my observations indicate that most students tend to do their own tracking and it's not necessarily by ability level. I see many of the same students in the low level math, science, and English courses

Unfortunately, those low level classes attract more than students of low ability; teachers tell me that these lower level classes are also chosen by students who are more capable but are lazy and think the work will be less demanding. They are also the classes that mainstream students with special needs. This combination sometimes creates special problems for teachers and students.

In addition, parental influence dilutes the classes at the upper end of the spectrum. Many parents with high aspirations for their children want them placed in the highest level course regardless of the students' abilities. So, although neither school has heterogeneous classes, teachers at both schools tell me that many of their classes work out that way. Clearly, tracking students or tracking classes presents problems.

Grandview and Pineland differ most in their English curriculum. In keeping with the more highly structured setting at Pineland, all four credits in English involve year-long required English courses. At Grandview, only freshmen and sophomores take year-long required courses; juniors and seniors take half-year electives to complete their English credits. However, English classes at both schools stress language use and frequent writing. Process writing has been implemented for all levels at both schools. English teachers from both schools have been trained as scorers for the MEA writing section and use the scoring rubric in their own classes. In addition, reading and writing across the curriculum have been intensified, and teachers feel that this has helped students at all levels to deal with the problem solving and critical thinking sections of the tests.

Teachers and students at both schools in interviews and on the surveys agree that science has seen the least change in curriculum and remains the most traditional. Gains in science scores for both schools have come mostly from the highest level students, although more students are now choosing to take science electives above the required two credits necessary for

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graduation. The science chairs at both schools claim that science courses have become more rigorous for all students, but neither school provides lab sections for low level science courses. The science chair at Pineland is the most traditional of all of the teachers I talk with and feels that student scores are improved by rigorous and direct teaching. Since achievement gains in science at Pineland outstrip the gains made at Grandview, I cannot argue his point. The individual science classes I observe at Grandview are more student-oriented and interdisciplinary than those I observe at Pineland.

Instruction

Styles and methods of instruction at both schools varied considerably from subject to subject, from teacher to teacher, and even among different classes taught by the same teacher. There are, however, a few patterns in instruction that can be observed at both schools. At Grandview and Pineland, the state tests have prompted shifts in emphasis to higher order comprehension skills and stress on process as well as product. Teachers made changes in their instructional approaches.

For example, English teachers at both schools have been trained in scoring the MEA writing section, and are using that training to develop their students' writing abilities. All the classes I observe teach process writing: brainstorm, draft, organize, write, peer edit, revise. However, at Pineland I observe more drill in language use and grammar. This may be due to the fact that I am able to observe 9th grade classes at Pineland and the 9th grade is not housed at Grandview High School. That emphasis on process has apparently produced welcome results at both schools, since the largest gains in writing test scores for both schools have been for boys

and students in low ability classes. Those gains are considerably greater than state averages for boys and low level students.

Math classes at both schools are also highly process-oriented; the tests demand that kind of thinking. Again, that process is more teacher-directed at Pineland than it is at Grandview. In the math classes I observe at Pineland, the teachers lead the students through the process more frequently than the teachers do at Grandview, where students are more often asked to work through the process entirely on their own. For both schools, in math, girls and low level students have made the most gains on the MEA's, again outpacing state gains.

In science classes, teachers at Pineland do more lecturing than they do at Grandview, where science classes concentrate more on the scientific method and 'hands-on' approaches. However, neither school provides much hands-on for lower level science classes. This may influence the fact that at both schools, gains in science achievement come mostly from the upper level classes. In low level classes in all subjects at both schools, I observe that teachers do a great deal more leading and prompting than they do in higher level classes.

Department chairs of all subjects at both schools tell me that teachers are concentrating on cooperative learning, but I see little evidence of a trend at either school. What I do see appears to be more dependent upon the teacher than the subject. Some teachers at Grandview, and a few teachers at Pineland come closest to applying real cooperative learning. Most of what I observe in other classes simply involves students working together on homework assignments or worksheets.

Both at Grandview and Pineland, little class time is spent off-task. While I would expect that some teachers would increase task orientation for my benefit in observations, in both schools students also give 'task orientation' their highest rating on the survey. Teachers at both

schools have high expectations for their students and the students are held responsible for their own learning. Most classes at both schools are very teacher directed, although they all vary enormously from high energy lecture and tight discipline to loose and casual discipline and a high level of student participation.

What I learned about instruction through interviews and surveys, and much of what I saw in my observations was all of a piece. In most cases, cooperative learning being the most obvious exception, student and teacher perceptions of what was happening academically and pedagogically was confirmed by real practice as I was able to observe it. Instruction at both schools emphasized the higher level comprehension skills required by the tests.

There is little doubt that test scores were the driving force behind the instructional changes. However, 'teaching to the test' does not seem to have stifled the individuality of teachers nor has it resulted in classes involved in rote drill and memorization. On the contrary, teachers in both schools are concentrating on process learning, problem solving, and critical thinking for all students regardless of ability levels.

Effective Schools

If the characteristics I have used to describe school climate and change strategies in these two schools sound familiar, it is because they are almost exactly what others have already identified as characteristics of effective schools. In summarizing these characteristics, I have found two sources especially useful as references: Cruickshank (1990, pp. 22-40) summarizes 22 studies in effective school research. In addition, the Department of Education (1986) published 41 'findings' on how best to teach and to improve learning. Each 'finding' is supported

by a list of relevant research. References to characteristics similar to Grandview and Pineland and to the research may be found in the above sources.

In effective schools, administration and faculty are open, supportive, and accepting of professional suggestions. At Grandview and Pineland, even when teachers opposed the idea of state tests, they were willing to use the results to improve the curriculum and their teaching.

Effective school literature tells us that high expectations of principals and teachers affect student achievement positively. At both schools, the principals have clear academic goals and high expectations for themselves and their teachers. Teachers convey these expectations to students by encouraging students to take the most challenging courses, by encouraging students to take more courses than required, and by insisting that students complete all of the required work with no excuses. Students are made responsible for their own learning.

Effective schools have a common sense of purpose that focuses on cognitive goals and school success. At Grandview and Pineland there is strong agreement among administrators, teachers, and students that the most important job of the school is to teach basic skills. The curriculum reflects the focus on cognitive goals by offering the same courses, a common core, to all students regardless of ability level.

Effective schools promote students' feelings of efficacy. Students at Grandview and Pineland indicated in surveys and interviews that they felt they had the power to produce successful results, even though they might choose not to. A majority of students at both schools felt that all students had an equal chance of success if they were willing to work hard. Teachers agreed with them.

Nearly all teachers at both schools maximize instructional time and are highly task-oriented. Classes are mostly teacher directed, and students do little independent study.

However, no single instructional method predominated at either school. Classes varied from straight lecture to open discussion and some cooperative learning, and many classes utilized a variety of approaches in a single period. Teachers at both schools were highly experienced.

Both Grandview and Pineland provided an orderly climate that was conducive to learning. Students felt that teacher control in classes was low, and in most classes I observed, little time was spent on disciplinary action. However, where necessary, teachers used a number of management techniques in their instruction that promoted control without losing time on task. The cleanliness of the schools also attests to their orderly climate.

Grandview and Pineland are also similar in the areas in which they differ from the effective schools research. There has been no intensive or prolonged inservice at either school, and according to the survey, teachers feel that staff development programs are only 'average' in the help they provide. Teachers I talk to in both schools would rather work on personal or departmental goals than on whole-school goals. Teachers seldom meet interdepartmentally, but work individually with teachers from other departments on interdisciplinary work. In fact, at both schools, meetings are minimal: according to the survey, the faculties meet approximately once a month as do the departments. Nothing else is regularly scheduled. The main concentration of the teachers has been on their students and their classes.

Although teachers are talking about cooperative learning and both schools have done some inservice work with it, cooperative learning did not predominate as a major teaching method in most of the classes I observed in either school.

Community involvement is nearly nonexistent in both schools, as is Site-Based Management as described by the restructuring literature. Neither school has involved itself in a 'visioning' process with the whole community to arrive at goal consensus.

Although most of the strategies for increasing student achievement scores reflect the characteristics of effective schools, there was no overall plan to implement those strategies at either school. Changes were not mandated in curriculum or instruction. While there was consistent pressure from administrators, colleagues, and the community at both schools to raise student achievement, departments took responsibility for curricula changes, and teachers decided on their own instructional adaptations. They simply incorporated the changes into modes already in existence. Change at both schools was incremental, not applied all at once, and those changes fit the intrinsic structure of both schools.

In comparing Pineland and Grandview, many of their instructional strategies are similar to those recommended by the 'effective schools' research (e.g. Rutter et al., 1979; Edmonds et al., 1978; Brookover & Lezotte, 1979). Goodlad (1984) and Sizer (1984) take several of their recommendations from that research as well, including high task orientation, improvement in teachers' pedagogical skills, high expectations. To those they both add a focus on central skills or 'core curriculum'.

None of these recommendations are new; they are, in fact, old hat to many educators. That is no reason to discard them for newer and less tested strategies to improve student achievement. Perhaps the reason they have repeatedly appeared in a wide variety of school improvement programs is that there is some validity to the research that suggests that these strategies work. Rutter (1979) examined their efficacy in London secondary schools. Brookover & Lezotte (1979) did likewise with American elementary schools. Edmonds (1979) added his voice in a study of inner city elementary schools. The same strategies also appear to have worked for the two small homogeneous rural secondary schools in this study.

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There are, of course, some very special attributes of Pineland and Grandview High Schools that may separate them from other schools, the most important being the pre-condition of caring and trust discussed above. Another strength of both schools is their reflection of the values of the communities they serve: that everyone deserves the opportunity of a quality education, and that all students are capable of success if they work hard. Their communities trust the knowledge and experience of their teachers in making the best educational decisions for the students. This final attribute may be very difficult for other schools to replicate, but it has been tried in larger communities. It is usually less than successful when teachers resist the community's need for accountability. Pineland and Grandview teachers honored that need.

The results of this study indicate that the 'effective schools' recommendations are worth another look, that they do not have to be implemented all at once, and that they do not need to stifle the individuality of the school or its teachers. Rather, they can be adapted to fit the intrinsic structure of the individual school and community and the individuality of its teachers.

NON-INVOLVED STUDENTS

One of the major criticisms of American secondary schools made by both Sizer (1984) and Goodlad (1984) had to do with the extreme passivity of their students, their lack of involvement and engagement in their studies. This criticism is not new, nor is the effort to improve student involvement. Much of the impetus behind the secondary curriculum described by Powell et al. (1985) in The Shopping Mall High School came in part out of an effort to make the high school curriculum more relevant to students, to give them more choices. The result was viewed as a failure as far as student achievement was concerned. Today, schools are looking at interdisciplinary and thematic units to make that connection with students, to accomplish that

involvement. It is important to continue to search for ways to make learning more meaningful to students, ways to get them involved. Therefore, I was dismayed to see that students at Pineland and Grandview rated their 'involvement' so low in the survey.

When the results of the survey were tabulated, I found it necessary to look more closely at individual class ratings on the category of 'involvement' on the survey in order to discern differences. When I saw the difference in ratings for the 'involvement' category between teachers and students, I altered my observation schedule. When I had been observing classes in math, English, and science at both schools, I was observing as a professional educator, looking through the eyes of a teacher or teacher supervisor. As such, I believed, as the teachers did on the survey, that I was seeing a broad range of student involvement.

In order to see through the eyes of a student, I decided to follow the regular schedule of two typical students for two days in each school to see if my perceptions might change. Indeed, my days of observing as a student were quite different. Previously, my center of focus was on evaluating similar criteria in each class I observed as an educator: time on task, student participation, student/teacher interaction, tempo, and instructional methods. As a student, I found that I was required to shift my concentration every 45 minutes and readjust my thinking to a new subject. Every teacher in every class wanted my undivided attention focused on his or her subject. I was expected to think like a mathematician, a writer, or a scientist, in 45 minute segments.

It was impossible for me to maintain that level of interest in the content of all classes. Even trying hard as an adult, I found myself daydreaming and fidgeting. I vividly recalled my own high school classes and remembered feeling that I had lots more 'important' things to think about than equations, old books, and the Periodic Table. Yet I had liked school, had

participated actively in what was required, and had done well in my grades. And, I learned as well. I don't remember being terribly 'involved' in my high school grammar classes, but I remember what I learned to this day.

As educators, many of us have come to accept the supposition that learning only takes place when the student's mind is totally engaged, when the student takes an active role in directing his or her own learning. Perhaps we need to question that supposition. As adults, we really know that lots of things we learned we were not actively involved with, but we learned them anyway. Because someone whose knowledge we trusted - our parents, our teachers, our institutions - told us we needed to learn them.

Perhaps it is an adult fantasy to expect that adolescents be fully involved and engaged in everything that we as adults set out for them to learn. Noddings (1994, February 11) confirmed my observations. She said that it may be unrealistic to assume that all children want to think like scientists or mathematicians or writers. She went on to explain that students don't have to be interested in math; not many people are, including many educators if we're honest with ourselves. But we do have to learn math to get on in life.

As teachers, we cannot abdicate our responsibility to see to it that students learn what we think is important to them. At the same time, if we are to insist on our students learning something, we must have a very good reason for that insistence, and we should be able to convey it to our students. We should try to get our students involved. We should learn from the teachers who are most successful at it. The survey certainly indicated that some teachers were indeed more successful than others. We should use all the pedagogical and motivational techniques available to us. But we cannot force it. We cannot always turn our our teaching into entertainment and games. Sometimes, we may have to accept the fact that we can teach, and

students can learn, even when they are not personally involved with a subject that their teacher feels passionately about.

Clearly, some teachers engage their students' minds better than others. These differences in student involvement would be an excellent topic for further study. It appears, however, that a consistently high level of student involvement is not necessary to improving student achievement on the MEA's.

Opposition to Standardized Testing

Another question that must be addressed here is the use of the tests as a professional development tool. Teachers at both Pineland and Grandview were defensive about being viewed as 'teaching to the test', yet several told me privately that they believed the tests acted as a catalyst for improvement and a valuable professional development tool.

I believe that blanket opposition to standardized achievement tests as the politically correct educational attitude may become a serious threat to improved student achievement. Students may be better served by educational leaders who 'care' more for the needs of their students than maintaining their own lofty and unrealistic positions. I am not alone in my beliefs.

Noddings (1994, February 11) says that if testing is important to students then it is important to teachers. She adds that we must teach the students how to take the tests as well as what is in them. It has always amazed me that while recognizing that their students would have to do well on SAT's, GRE's, NTE's, LSAT's, Bar Exams, and Medical and Nursing Boards, many institutions have removed themselves from tainting their intellectual fingers by preparing their students for just such exams. Many schools have left that preparation to businesses who make a tidy sum out of 'teaching to the test'. The Stanley H. Kaplan Co., started by a student

from Columbia University, has been preparing students for standardized tests for more than 50 years and now enrolls between two to three million students each year. My daughter graduated from a prestigious university and was advised to enroll in a private preparation course before taking the Nursing Boards. Young summer interns in a friend's law firm talk about the cost of preparing for the Bar Exam.

Yet I have heard high schools criticized, and a teacher actually apologized to me once, for teaching a non-credit course in SAT preparation. How much more honest we would be if we would all recognize the reality of testing and the needs of our students.

Much energy in education has been spent on defining new administrative, curricular, and instructional methods. Some of these are becoming quite standardized as the politically correct choice in education: site-based management, total quality management, thematic curriculum, cooperative learning, student-led discussion. I am excited by many of these methods myself. But not to the exclusion of all other possibilities. At Pineland and Grandview, I see two schools that have made great strides in improving student achievement without restructuring the administration and without imposing a single 'right' way on their teachers. Perhaps presently prescribed plans may not be appropriate for all schools and all teachers.

Summary

Both teachers and administrators have been on overload for more than a decade in trying to find ways to improve student achievement. Plans and programs for improvement have proliferated: The Coalition for Essential Schools, School Development Program, Special Strategies Program, and Success for All, to name just a few. Even political entities have joing the fray as in Memphis, Kentucky, and Broward County, Florida.

All assume that a 'program' must be selected or designed, that schools must have a single 'model' of reform or restructuring to follow. Indeed, most of the educational administration journals are filled with such concrete proposals and assessments. Conversely, teacher journals are filled with abstract criticisms of proposals and assessments, and suggest ways for individual change. Too often, perspectives from the top and the bottom differ considerably.

Fullen (1996), suggests that we focus more attention at the bottom. He adds that, "Fragmentation occurs when the pressures ... for reform work at crosspurposes or seem disjointed or incoherent." (Fullen, p. 22). For example, "Maine's Common Core of Learning," the document that sparked the drive to establish Maine's new Learning Results, grouped separate disciplines into integrated and thematic connections. However, the M-L-R- and their new MEA assessments, have forced schools throughout the state to spend countless hours developing discipline specific curricula to meet the legislated new standards. Fullen also suggests that overload and fragmentation can reduce educators' motivation for reform and can end in hopelessness. Fullen then goes on to explain his plan for improving the bottom through networking, reculturing, and restructuring. Fullan's plan would also impose similar expectations on all teachers in a school system.

I would like you to consider that consensus on any 'plan' or 'program' or 'model' of reform/restructure is not necessary to improvement of student achievement, that some non-linear fragmentation can be healthy for both teachers and students. Most research agrees that, " No reform network can guarantee positive outcomes, as these depend on the quality of implementation." (Fashola & Slavin, 1998). There is no research to show that all students learn best under any particular instructional method or structure; in fact, brain research teaches just the opposite. I would maintain that good teachers know best what they need to improve their

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teaching. Some may choose more content learning; others newer educational strategies. Large scale professional development days with planned programs are not necessarily most effective in improving teaching, yet that is the model most often proposed for improving professional development.

The question of standardized testing and the utilization of its results has proven to be a divisive factor in many communities and schools. This did not happen at Pineland and Grandview, and I believe that the allowance for diversity in instructional methods reflected a climate of openness that allows differences of opinion to exist without damaging conflict.

Much of the educational criticism around standardized testing and teaching to the tests involves a fear of drill and practice classes, especially for lower level students, a watered down curriculum, and the use of the tests as a 'high stakes' issue for graduation, funding, and the like. Instead, what I found at Pineland and Grandview was a higher level curriculum for all students and a focus on process teaching and problem solving in nearly all classes. Nor did the communities or the schools use the tests for rewards or punishments.

The key here is that change was not mandated at either school. Nor was a single program of reform or restructuring followed. No task force or administrator forced a single model of change on the teachers. Instead, teachers were allowed to come to their best judgement about what they should do. Some changes were departmental; many were individual. Teachers felt supported in trying out new ideas, but were independent in setting their own pace for change. Students and parents and administrators trusted the knowledge and experience of the teachers in making the best educational decisions.

I believe this context of trust and benevolence was necessary to the gains in student achievement. The change in attitudes toward the tests would not have been possible with a

faculty that was defensive and untrusting. Students would not have accepted those attitude changes if they didn't trust their teachers.

Teachers would not have been willing to examine the tests and analyze their own weaknesses in curriculum and instruction if they didn't believe in their own competence and trust that the community and the administration would not use the test results as threats or punishment. The climate for change existed. Teachers were allowed to work from their strengths and to make some of their own decisions about what was important.

Recommendations

The question still remains: What can be learned from this study of Pineland and Grandview High Schools that will help administrators and teachers in other schools? What strategies or levers are supported by the results of the study? First and most important, I believe, is that schools must create the pre-conditions necessary for improvement, to establish a climate of caring and trust. Without this, I believe, that school improvement efforts are doomed to failure. There must be an open system of trust and respect that can allow for diversity of opinion, and even conflict, without causing a breakdown in the system. It means listening to and validating opposing views. It means giving up extreme positions and compromising to 'good enough' when you can't have it all.

Second, the results of this study suggest that schools concentrate on a single goal and that the goal be kept simple. All members of the school community must be willing to make an individual commitment to that decision. It does not mean that everyone has to approve, nor does it mean that everyone has to commit to the same action. It does mean sifting through the best

information available before making a decision to change, and it means accepting the personal responsibility to act even when the available information cannot guarantee the desired results.

Third, study results suggest that administrators and teachers discard the conventional opposition to standardized tests per se and examine the tests that students take as a tool for school improvement. There is no question that tests can be improved; the real challenge in reform is to develop a more valid test that covers more high quality content and a higher level of thinking. But that is in the future. Accountability now is a necessity, and schools must be willing to accept their responsibility to the public and to the students. There is no indication that students who can work at higher levels of thinking cannot also do well with the basic skills demanded by many standardized tests. It is a fact that our best students turn in the best performance on standardized tests, yet no one would suggest that these same students know only 'basic skills'.

The very term basic skills suggests that they are building blocks for the higher skills. Nowhere has it been proved that basic skills can only be taught by rote drill and practice. That is a falsehood perpetuated by those who lack knowledge and imagination. No teacher is limited to teaching basic skills; they must only be included. Basic skills do not have to limit methods of instruction; they can challenge a teacher's repertoire of teaching methods.

Fourth, as a result of the study, I would recommend that schools embrace the diversity and experience of their teachers by not mandating single solutions. They should provide the support and encouragement for teachers to learn and develop and practice new techniques that are most comfortable for them. I do not believe that effective change can be mandated. Our hopes for improving student achievement will depend heavily on classroom teachers and their commitment to that goal.

Finally, schools seeking to improve should look at their own strengths and those of

the community as well as their weaknesses. Don't fix what isn't broken. Assess the real needs and goals and make them explicit. That can be done quickly and efficiently with a simple school climate survey such as the one used in this study. A school can add its own important questions. This final recommendation does not come as a result of this study: Pineland and Grandview did not conduct such a needs assessment. However, I believe it unlikely that most schools will uncover such a consensus on goals that existed at these schools. Many school communities will not be as homogeneous as these were.

Besides, a periodic needs assessment is helpful to clarify issues and problems. Even as this study was being completed, based on my conversations with teachers, the consensus at both schools was weakening. Following the literature on school improvement, both schools were beginning to move in new directions, such as soliciting community involvement, and working on site-based management and outcomes-based assessment. These changes in focus may dilute the consensus that existed during the period that student scores were raised. A needs assessment would help to clarify the need for and the commitment to further change. Instead, like the principals in my study, confident administrators can allow teachers and departments to choose their time and place for professional development. Some teachers may want full semester course work; others one-day workshops.

The only area that demands consensus is in deciding what students should know and be able to do at the end of course work and graduation. This is a decision for individual schools and communities to make. Where states have mandated standards, as in Maine, schools must include but not be limited to these standards. When teachers strongly disagree with standards, it is their job to work to change them. The only responsibility for schools and teachers is to be

accountable for student learning. All assessment need not be similar, but it must clearly show how students have met the selected standards.

According to Noddings (1992), caring is not a sentimental emotion nor is it an empty response; it is a moral burden and a responsibility. It demands decisions and action and commitment. Waiting for 'perfect' is not an option when caring is involved; 'good enough' may have to do. When student scores on the early MEA's were low, administrators and faculty at Pineland and Grandview High Schools accepted the responsibility for raising those scores. They did not look for scapegoats or begin expensive strategic planning for raising scores in some distant future. Teachers told me that they felt their students deserved to do better and that they wanted to help them to achieve that goal.

Without any large expenditure of money or time for staff development, teachers and administrators made some decisions, and even compromises. Certainly this was the case surrounding the attitude changes on the importance of the tests. Teachers didn't like the state tests; neither did the administrators nor the students. But the tests were a reality; they weren't going to go away. Both schools accepted the communities' need for accountability.

Future Suggestions, Notes and Cautions

Fullen (1996) calls for a fundamental redefinition of teachers. . ". I would agree. I believe it is time to educate teachers as leaders, to build on a strong system of mentorship and promotion, to examine ways for teachers to rotate administrative roles, and to raise teaching to more respectable levels. I believe this is especially important if we hope to attract the most talented students, both whites and minorities, into our classrooms.

In order to accomplish this goal, administrators and teachers in high schools need to get more involved in teacher preparation programs. Educating teachers is as much the responsibility of the high school as it is of the university if we are to improve our public schools.

It's important for me to make clear that although I use comments and suggestions from Noddings (1984, 1992, and 1994, February 11), I have taken liberties with her writings to support my findings. I do not mean for this study of suggest that either Pineland or Grandview reflects exactly the kind of school that Noddings envisions in her philosophy. However, I feel comfortable with the fact that Noddings recognizes the reality of schooling as it exists, and that a beginning must be made somewhere. I believe these two schools do reflect the core of 'caring' that she recommends.

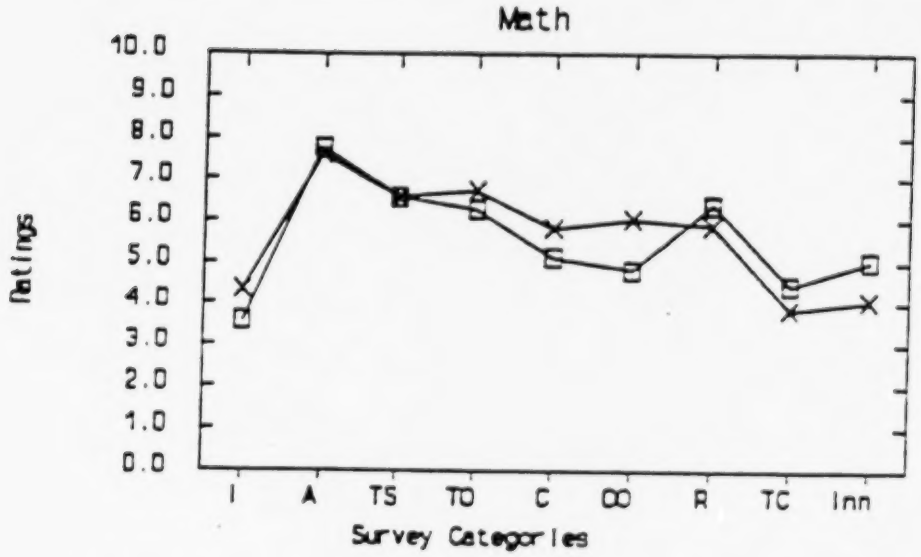
One final caution: all of the recommendations and observations to come out of this study are based on short term achievement gains that brought the schools studied from below their expected score bands to the top of those bands, and from below state averages to above state averages. The methods used may not provide the same amount of increase for schools already operating at or near the top of their expected score bands. Nor is there any guarantee that the schools studied will continue to raise their scores. In fact totally new and long-term planning may be necessary for a continued rise in scores to well above expected levels. However, the short term gain does buy time and comfort to allow for long-term planning.

Meanwhile, we cannot afford to lose this generation of students. While the educational establishment argues the merits of different plans, while politicians inundate the schools with visions of the future, and while schools suffer under scarcer resources and more responsibility, teachers and administrators seek some plans that are doable and manageable now. Pineland and Grandview found their plan. I hope it helps others to find theirs.

SUMMARY OF SURVEY CATEGORIES

1. Involvement (I)- Asks questions about amount of personal energy students put into class time spent actively participating, paying attention, and doing independent and/or extra work.
2. Affiliation (A) - Asks how well students know each other, enjoy working together, help each other with homework and projects, and refrain from cliques and conflicts.
3. Teacher Support (TS) - Asks about teachers' personal interest in students, teachers' trust of students, teachers' respect for students, provision of academic support, and teacher as friend vs. authority
4. Task Orientation (TO) - Asks about class time spent on lessons, the importance of hard work, and if classes accomplish what they set out to do
5. Competition (C) - Asks if students are pressured to compete, if grades are important, if students care about the grades of others
6. Order & Organization (OO) - Asks if class starts on time, if students are quiet, if there are no discipline problems, no interruptions when someone is talking, if assignments and activities are clear.
7. Rule Clarity (R) - Asks if rules and consequences are clearly defined for the school and if they are enforced consistently.
8. Teacher Control (TC) - Asks if teachers set rules that are consistently followed, if teachers are especially strict, if students get in trouble for talking or not being in their seats.
9. Innovation (Inn) - Asks if there is lots of student input, if class activities vary widely, if class tries out new ideas, if students are encouraged to try new projects.

STUDENT RAW SCORE COMPARISONS



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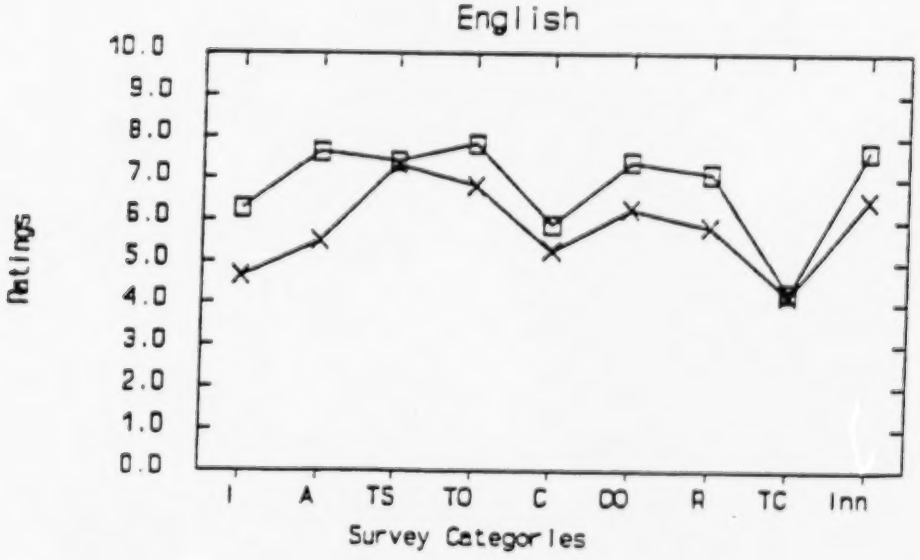

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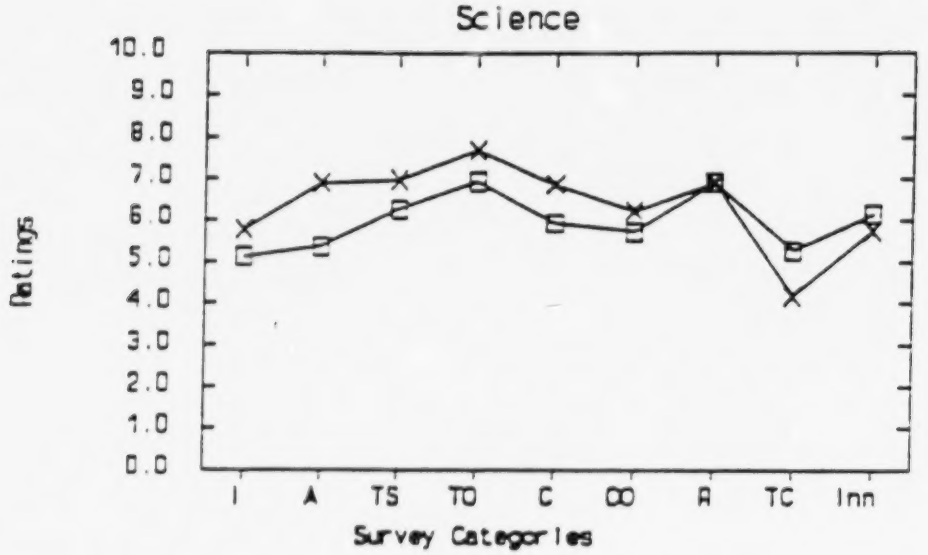

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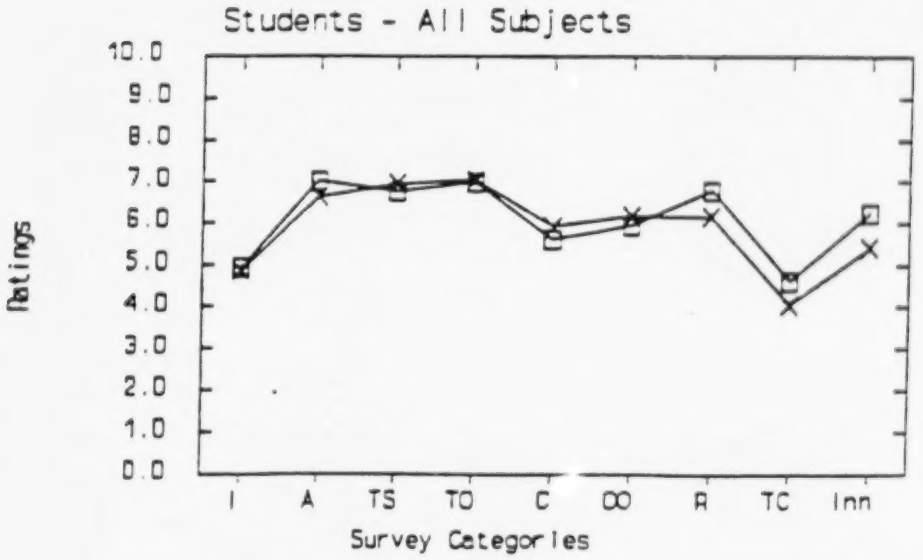

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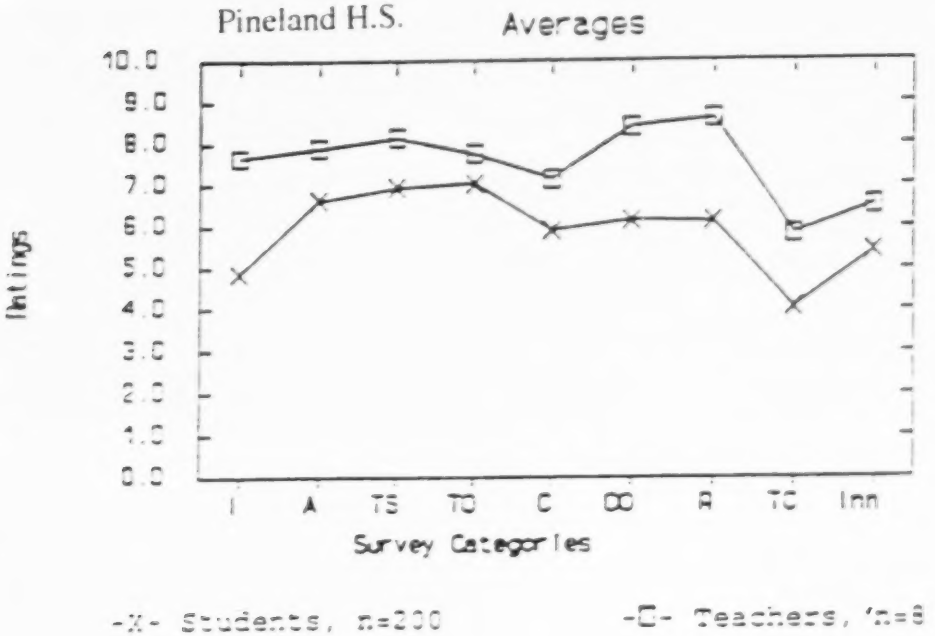
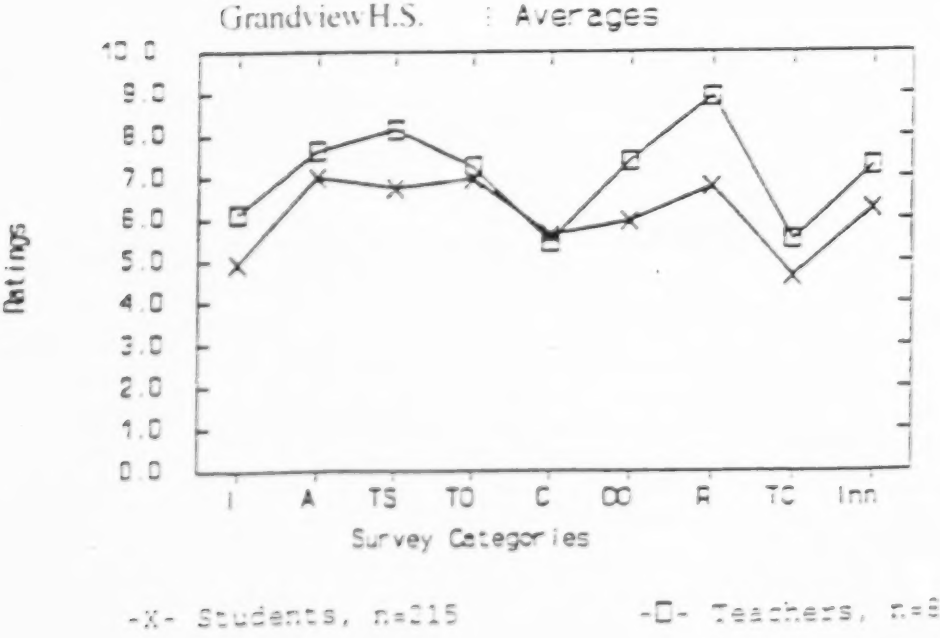
STUDENT - TEACHER RAW SCORE COMPARISONS





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